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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,899	05/01/2001	Melanie Russell	FOM-117.01	4640
25181	7590	07/12/2004	EXAMINER	
FOLEY HOAG, LLP PATENT GROUP, WORLD TRADE CENTER WEST 155 SEAPORT BLVD BOSTON, MA 02110			WACHSMAN, HAL D	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/846,899	RUSSELL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hal D Wachsman	2857	<i>Am</i>

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 8-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 and 12 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5-12-04 has been entered. In addition, the previously submitted after-final amendment reply of 3-26-04 has been entered.
2. The corrected drawings filed with the RCE on 5-12-04 as well as the corrected drawings filed on 3-26-04 are improper under 37 C.F.R. 1.121 because any replacement drawing sheet must be identified in the top margin as "Replacement Sheet". Appropriate correction is required.
3. The after-final amendment filed 3-26-04 has a specification amendment for the first page indicating "Please amend page 1, line 4 of the specification to *add* the following paragraph". However, as there is already a CLAIM OF PRIORITY paragraph from a previous amendment, it appears that instructions are needed here to replace the previous corresponding paragraph as opposed to adding this paragraph. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5, 134,574).

As per claim 1, the Applicant's Admissions of the prior art (figure 1, page 1 lines 11-15, page 8, lines 19-23, page 9, lines 16-23) disclose "computing clinker production at the kiln output, in which the cement production process produces cement as a product and clinker at the kiln output as an intermediate". The Applicant's Admissions of the prior art (figure 1, page 1, lines 12-22, page 8, lines 19-23, page 9, lines 16-23) disclose "computing the cost of clinker based on the computed clinker production". With respect to the displaying step, the above cited sections of the Applicant's Admissions disclose this step with the exception of explicitly disclosing that at least one of the clinker production and the cost of clinker as a function of time is

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being displayed. However, Beaverstock et al. (Abstract, col. 4 lines 1-4, 24-26, col. 10 lines 11-14) teach the displaying of production and the cost of the product being produced as a function of time in a process plant and thus would be of use in the monitoring of a cement production process. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Beaverstock et al. to the Applicant's Admissions of the prior art because as taught by Beaverstock et al. (col. 4 lines 11-20) such dynamic performance measurements are not only more accurate than prior art financial based performance measurements by being based on in-process information instead of post-process quantity of product made, but are also more useful to operations personnel by being provided/displayed in a timely (real time) manner which enables operations personnel to readily make necessary adjustments to increase performance of current plant operations.

As per claim 5, the Applicant's Admissions of the prior art (figure 1, page 9, lines 4-16 of the specification) disclose the coal being fed into a kiln but does not explicitly disclose the measurement of the feed rate of the kiln coal. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art

as specified above because knowing the feed rate of the fuel being used, such as coal, would be important in then determining from that how much fuel is being used to make the clinker and to factor in the cost of that fuel.

As per claim 7, with respect to the deriving step, the computation of clinker production and the cost of clinker has already been addressed in claim 1 above. It appears that the Applicant's Admissions of the prior art does not clearly disclose the comparing the derived measure to a threshold and generating an alarm steps. However, Beaverstock et al. (figure 7 – blocks 92 and 93, col. 16 lines 4-12) teach the comparing step and Beaverstock et al. (Abstract – block 76, col. 14 lines 19-36) teach the generating an alarm step. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Beaverstock et al. to the Applicant's Admissions of the prior art because as taught by Beaverstock et al. (col. 4 lines 11-20) such dynamic performance measurements are not only more accurate than prior art financial based performance measurements by being based on in-process information instead of post-process quantity of product made, but are also more useful to operations personnel by being provided/displayed in a timely (real time) manner which enables operations personnel to readily make necessary adjustments to increase performance of current plant operations.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5,134,574) as applied to claim 1 above, and further in view of Hansen et al. (5,569,030).

As per claim 2, Hansen et al. (col. 2 lines 12-15, 19, 20) teach that on the

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Average about 7-10% (but as high as about 17%) of the raw material feed on a dry basis is blown back from the drying zone as dust and that high dust loss means loss of efficiency of raw materials. Hansen et al. (col. 3 lines 65-67, col. 8 lines 43-47) further teach that reduced dust loss allows an associated reduction in the amount of raw material for the same amount of clinker production and that reduced dust loss enhances the efficiency of cement clinker production not only by decreasing the raw material/clinker production ratio but concomitantly allows for enhanced energy/fuel efficiency. Consequently, from the above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure the feed to the kiln and the dust being lost taking a difference between the two, because it would provide what is the actual effective feed that is being received for making clinkers for use in productivity determinations and determining the efficiency of the system. In addition, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Hansen et al. to the Applicant's Admissions of the prior art and the invention of Beaverstock et al. as specified above because as taught by Hansen et al. (col. 2 lines 18-22) high dust loss not only means loss of efficiency of use of raw materials but it also requires greater capital investment in dust collection equipment and loss of energy efficiency.

As per claim 3, the Applicant's Admissions of the prior art (figure 1, page 8 lines 10-20 of the specification) disclose raw meal input to a kiln with the exception of explicitly disclosing that this raw meal input is being measured. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the

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process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art and Hansen et al. as specified above because knowing the raw meal input into the kiln would be important in then determining from that how much raw meal input is being used to make the clinker and to factor in the cost of that raw meal input.

As per claim 4, the Applicant's Admissions of the prior art (figure 1, page 8 lines 12-20 of the specification) disclose slurry input to a kiln with the exception of explicitly disclosing that this raw slurry input is being measured. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art and Hansen et al. as specified above because knowing the feed rate of the slurry would be important in then determining from that how much slurry is being used to make the clinker and to factor in the cost of that slurry in clinker production.



7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5,134,574) as applied to claim 1 above, and further in view of Taulbee (2002/0050094).

As per claim 6, Taulbee (page 1, paragraph 0007) teaches the computation of a credit based on waste fuel. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Taulbee to the Applicant's Admissions of the prior art and the invention of Beaverstock et al. as specified above because as taught by Taulbee (page 1 paragraphs 0003, 0007) it would provide incentives to encourage the cleanup of fugitive coal fines which represent an environmental hazard as well as an expensive disposal problem.

8. The following references are cited as being art of additional general interest: "CAPE GIRARDEAU'S LOW COST 100,000 TON CLINKER EXPANSION" (Burian et al.) which disclose both computing clinker produced and the cost of clinker, "Advanced control methods ensure *cost-effective clinker production*" (Bauer et al.) which disclose an optimization system that ensures greater cost-effectiveness of kiln operation for clinker production and "AN EXPERT SYSTEM FOR ROTARY KILN CONTROL" (Devedzic) which discloses the cement production process with clinker as an intermediate.

9. Applicant's arguments filed 3-26-04 and 5-12-04 have been fully considered but they are not persuasive. With respect to arguments concerning 37 C.F.R. 1.111(b), the Applicant states "Contrary to the Examiner's assertion, Applicants are not required to

reply to every applied prior art reference". However, the Examiner respectfully notes the following sentence from 37 C.F.R. 1.111(b):

"The reply **must present arguments** pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references".

Therefore, as clearly shown above, there is indeed a requirement to reply to any references that are applied, and thus the Applicant in accordance with 37 C.F.R. 1.111(b) still must reply as shown above to the applied Hansen et al. and Taulbee prior art references.

With respect to the arguments concerning amended claim 1 and the amendment "...in which the cement production process produces cement as a product and clinker at the kiln output as an intermediate", the Applicant's admissions of the prior art in Figure 1 (see blocks 17, 22, 24 and 30) clearly shows this amended feature. In addition, the Applicant's Admissions of the prior art, as shown on page 1, lines 11-19 of the specification states:

"In a process plant, various processes are employed to produce amounts of a desired product. Traditional methods to measure general performance of manufacturing operations of a certain product include counting the amount of product produced over a certain period of time, and from that amount, calculating a cost per unit product. The cost per unit product is typically based on a standard cost function that is associated with operation, often developed at the beginning of a fiscal time period, and utilized throughout that period."


The Examiner respectfully notes that Webster's II New Riverside University Dictionary defines product as something produced by human or mechanical effort or by a natural process. Consequently, based upon the above definition, while being "intermediate", the clinker produced in the cement production process is indeed such a product as stated in the Applicant's Admissions of the prior art shown above. Also, as shown in paragraph 8 above, the Examiner has also provided additional evidence that computing clinker production and cost with clinker being an intermediate in the cement production process was indeed well known in the prior art. With respect to the Beaverstock et al. arguments, the Examiner respectfully notes that as Beaverstock et al. teach the displaying of production and the cost of the product being produced as a function of time in a **process** plant and being that cement production is such a process, it is quite clear that the techniques of Beaverstock et al. would be of use in the monitoring of the cement production process. The Examiner also notes that the Applicant's claim 2 in the preamble cites "...wherein **computing clinker production** comprises..." followed by the steps of this computing to which Hansen et al. was applied in a 35 U.S.C. 103 rejection. However, as already shown above, no arguments were presented by the Applicant with respect to this applied prior art reference.

10. No claims are allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D Wachsman whose telephone number is 571-272-2225. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Hal D Wachsman  
Primary Examiner  
Art Unit 2857

HW  
July 8, 2004